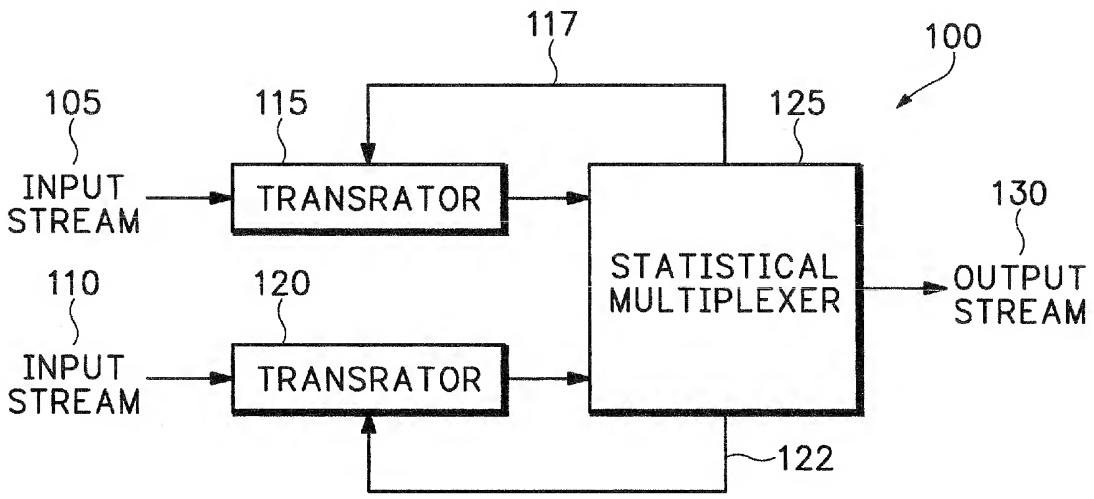

FIG.1
(PRIOR ART)

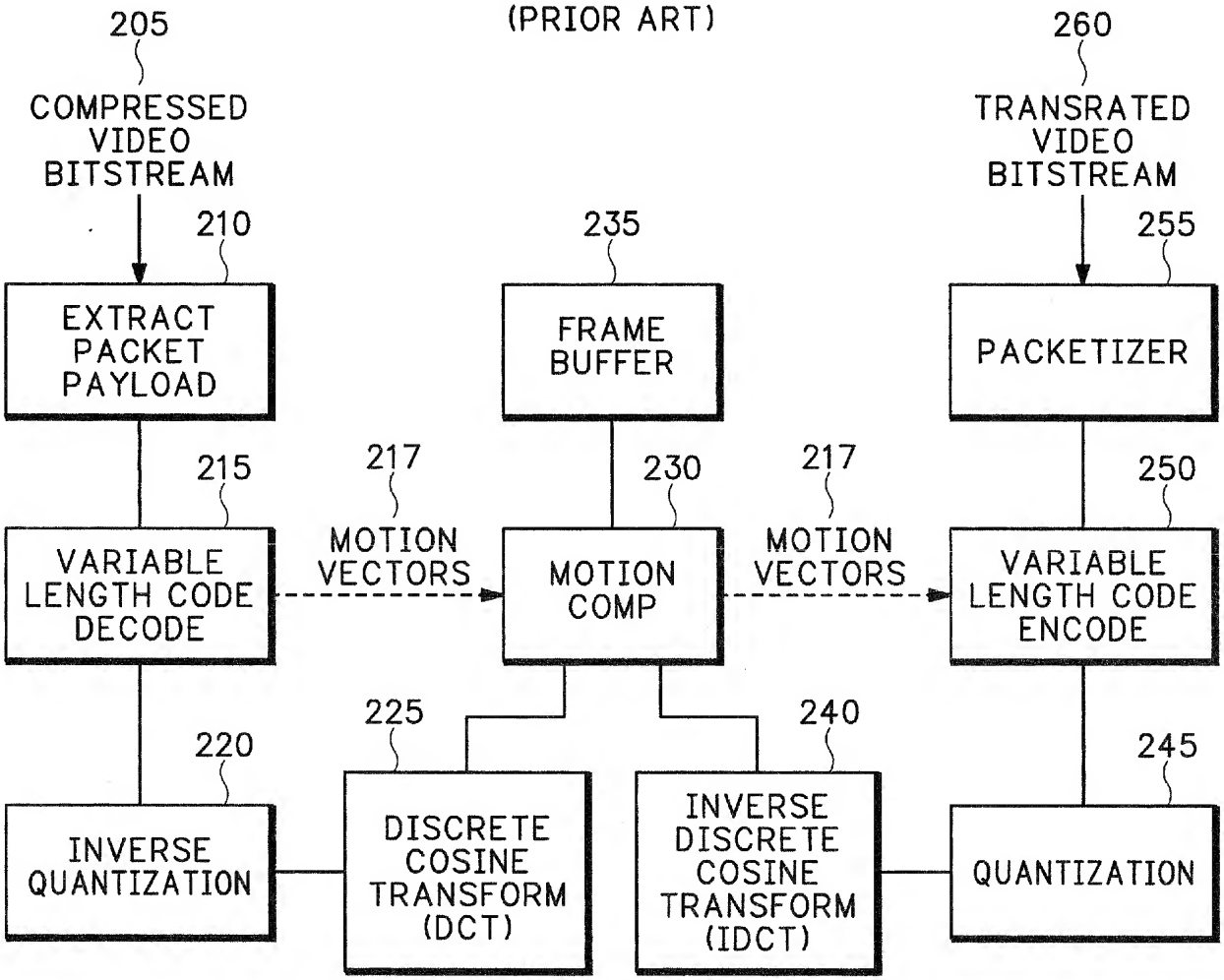

FIG.2
(PRIOR ART)

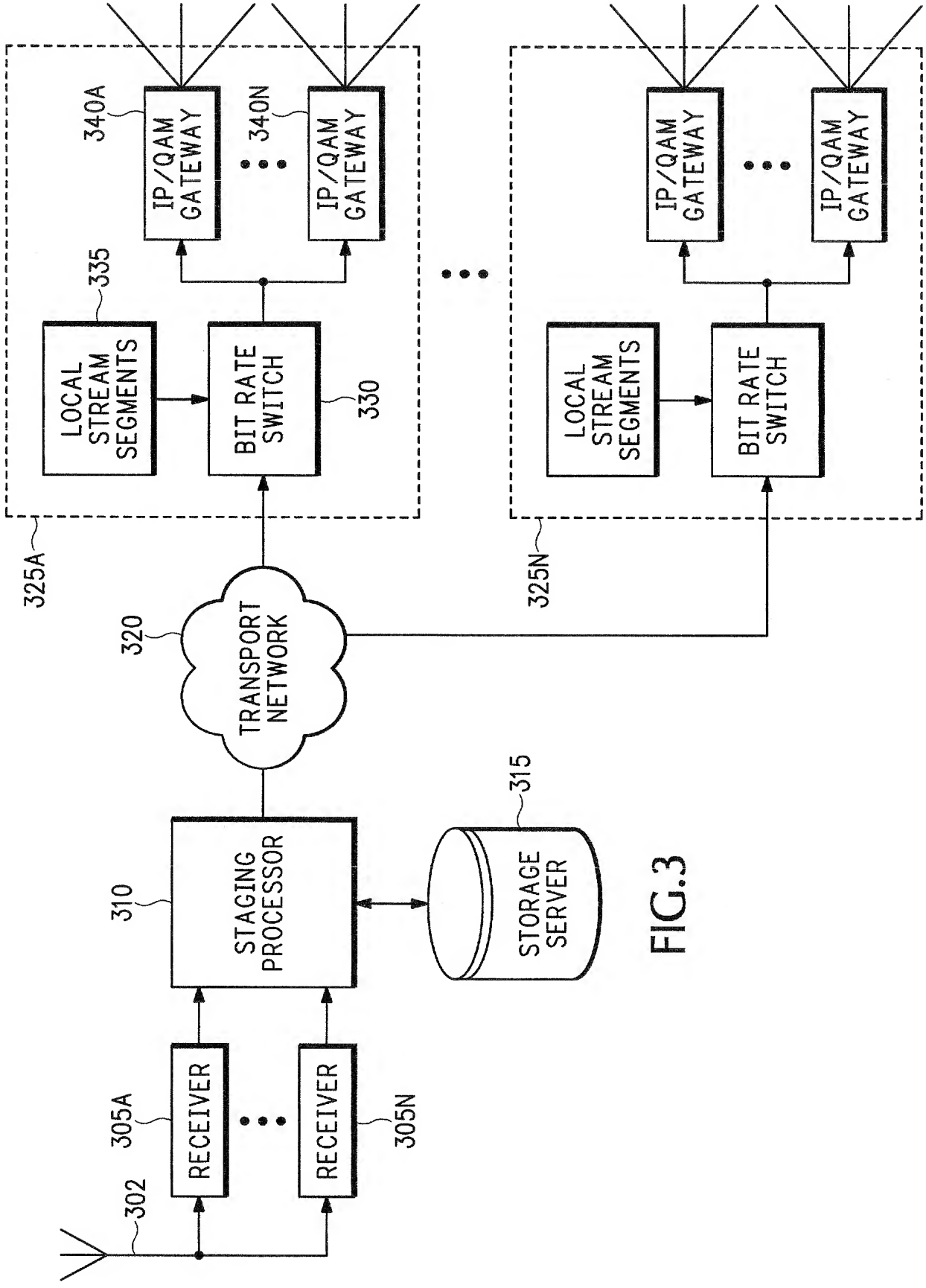
340A
IP/QAM GATEWAY
340N
IP/QAM GATEWAY
335
LOCAL STREAM SEGMENTS
BIT RATE SWITCH
330
325A
325N
320
TRANSPORT NETWORK
315
STAGING PROCESSOR
310
STORAGE SERVER
305A
RECEIVER
305N
RECEIVER
302

FIG.3

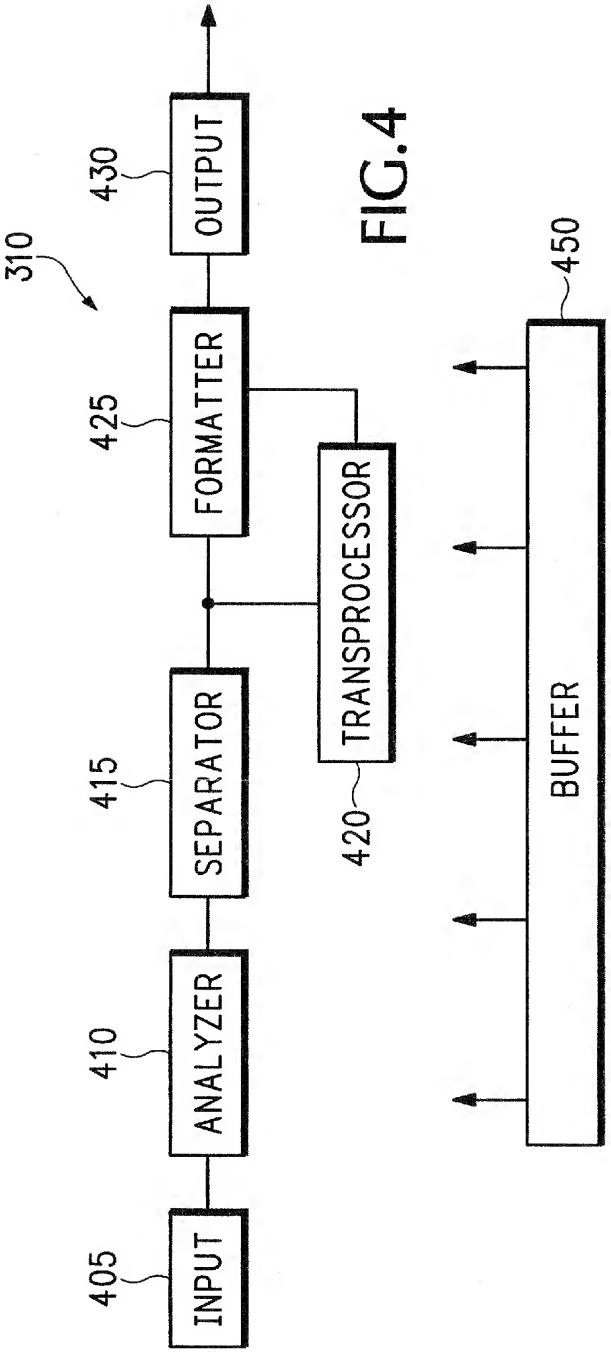
310
405
INPUT
410
ANALYZER
415
SEPARATOR
420
TRANSPROCESSOR
425
FORMATTER
430
OUTPUT
450
BUFFER

FIG.4

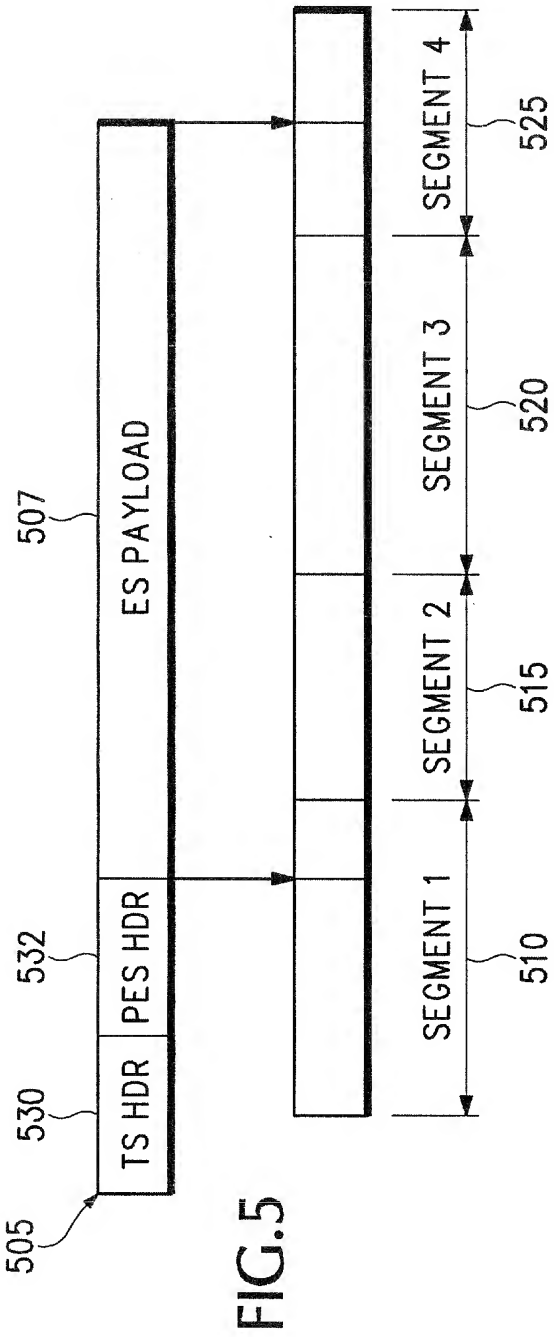
505
TS HDR
530
PES HDR
532
507
ES PAYLOAD
SEGMENT 1
510
SEGMENT 2
515
SEGMENT 3
520
SEGMENT 4
525

FIG.5

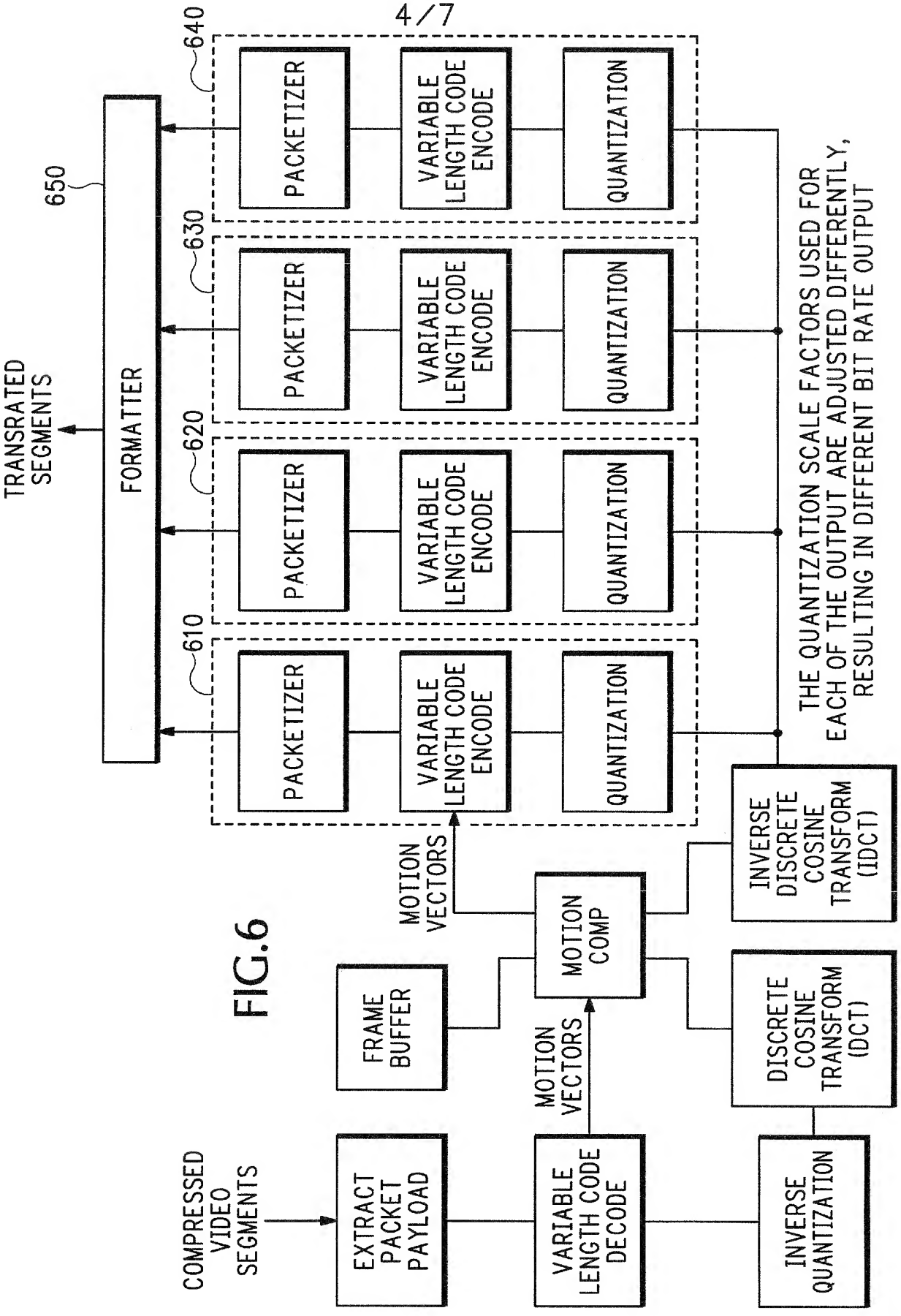
COMPRESSED VIDEO SEGMENTS
EXTRACT PACKET PAYLOAD
VARIABLE LENGTH CODE DECODE
INVERSE QUANTIZATION
DISCRETE COSINE TRANSFORM (DCT)
INVERSE DISCRETE COSINE TRANSFORM (IDCT)
MOTION COMP
MOTION VECTORS
MOTION VECTORS
FRAME BUFFER
650
FORMATTER
TRANSRATED SEGMENTS
640
630
620
610
PACKETIZER
VARIABLE LENGTH CODE ENCODE
QUANTIZATION
THE QUANTIZATION SCALE FACTORS USED FOR EACH OF THE OUTPUT ARE ADJUSTED DIFFERENTLY, RESULTING IN DIFFERENT BIT RATE OUTPUT

FIG.6

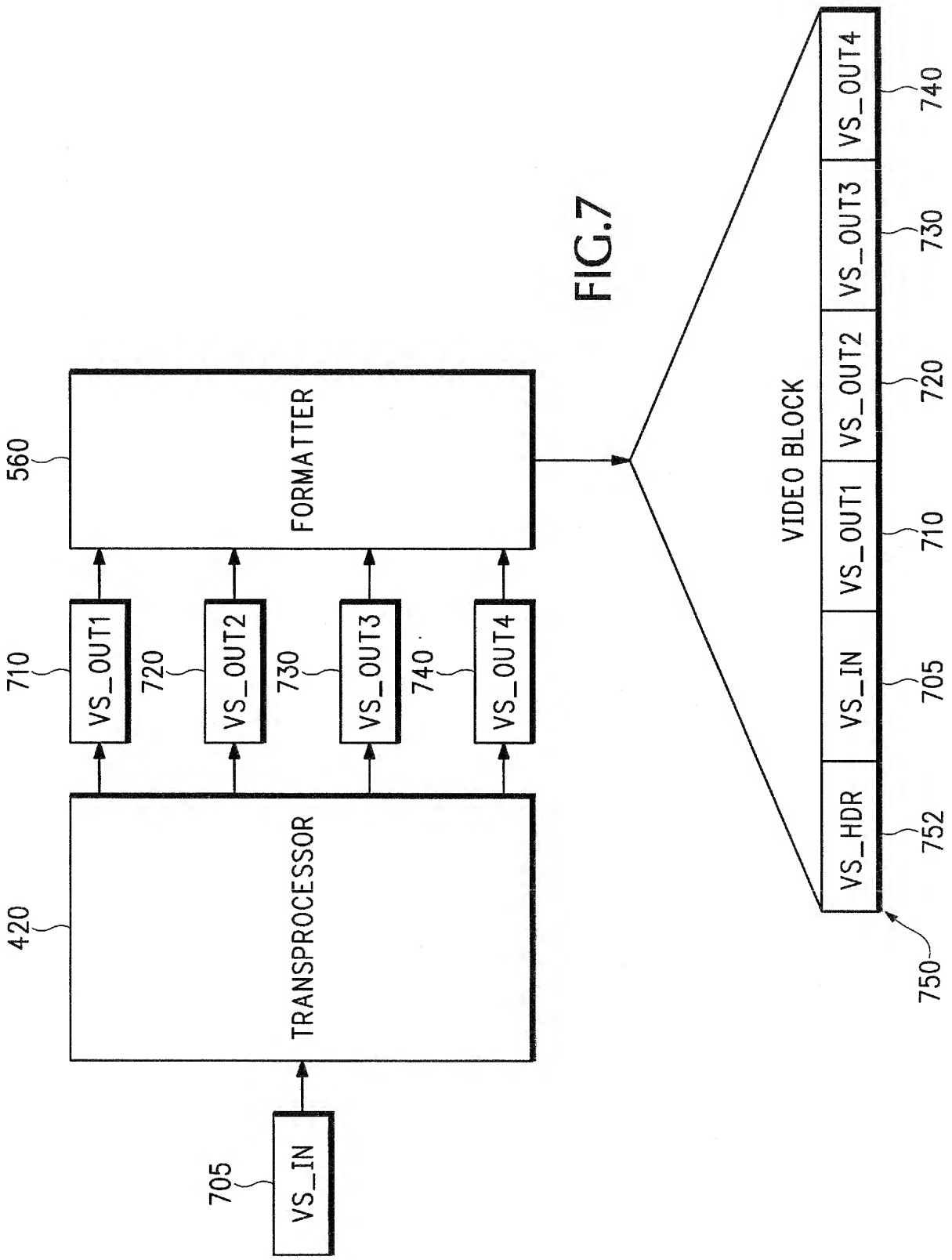
705
VS_IN
420
TRANSPROCESSOR
710
VS_OUT1
720
VS_OUT2
730
VS_OUT3
740
VS_OUT4
560
FORMATTER
VIDEO BLOCK
VS_HDR
752
VS_IN
705
VS_OUT1
710
VS_OUT2
720
VS_OUT3
730
VS_OUT4
740
750

FIG.7

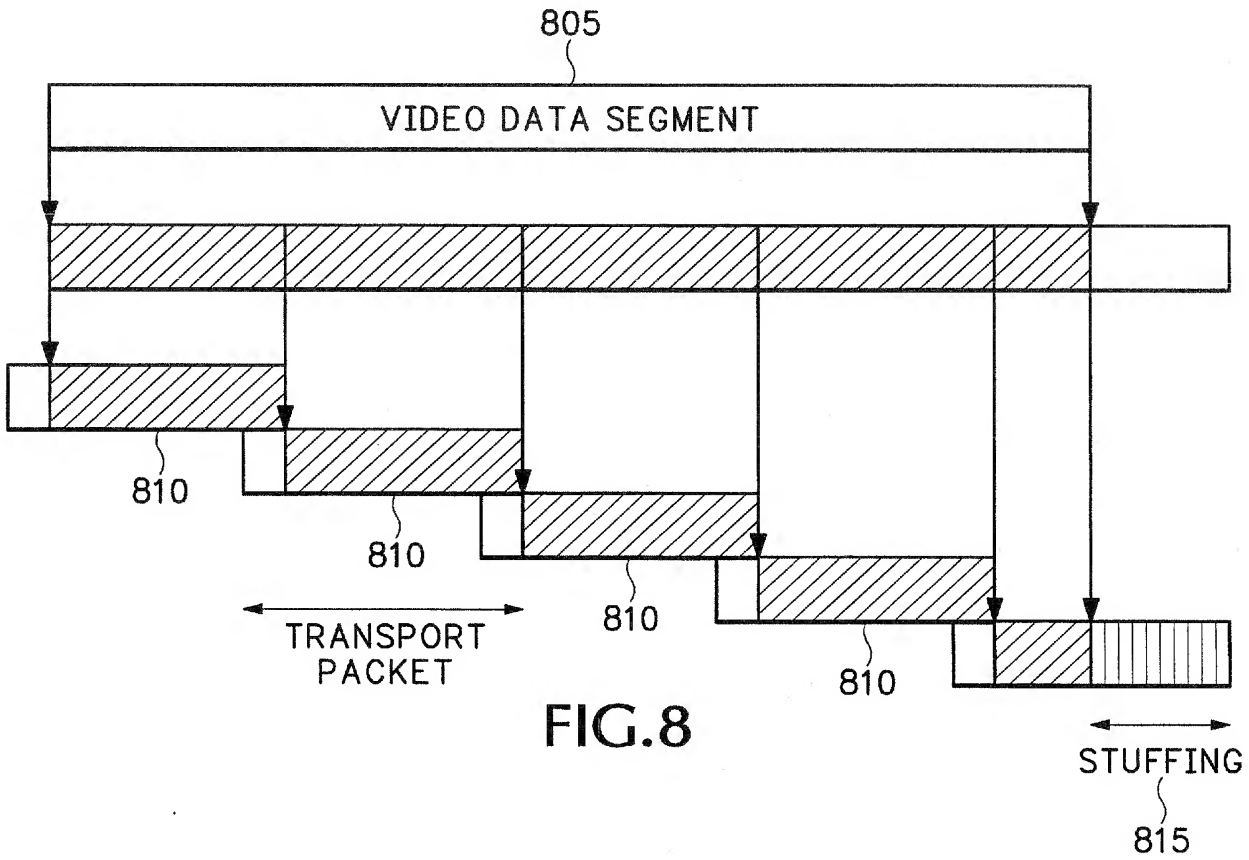
805
VIDEO DATA SEGMENT
810
810
810
810
TRANSPORT PACKET
STUFFING
815

FIG.8

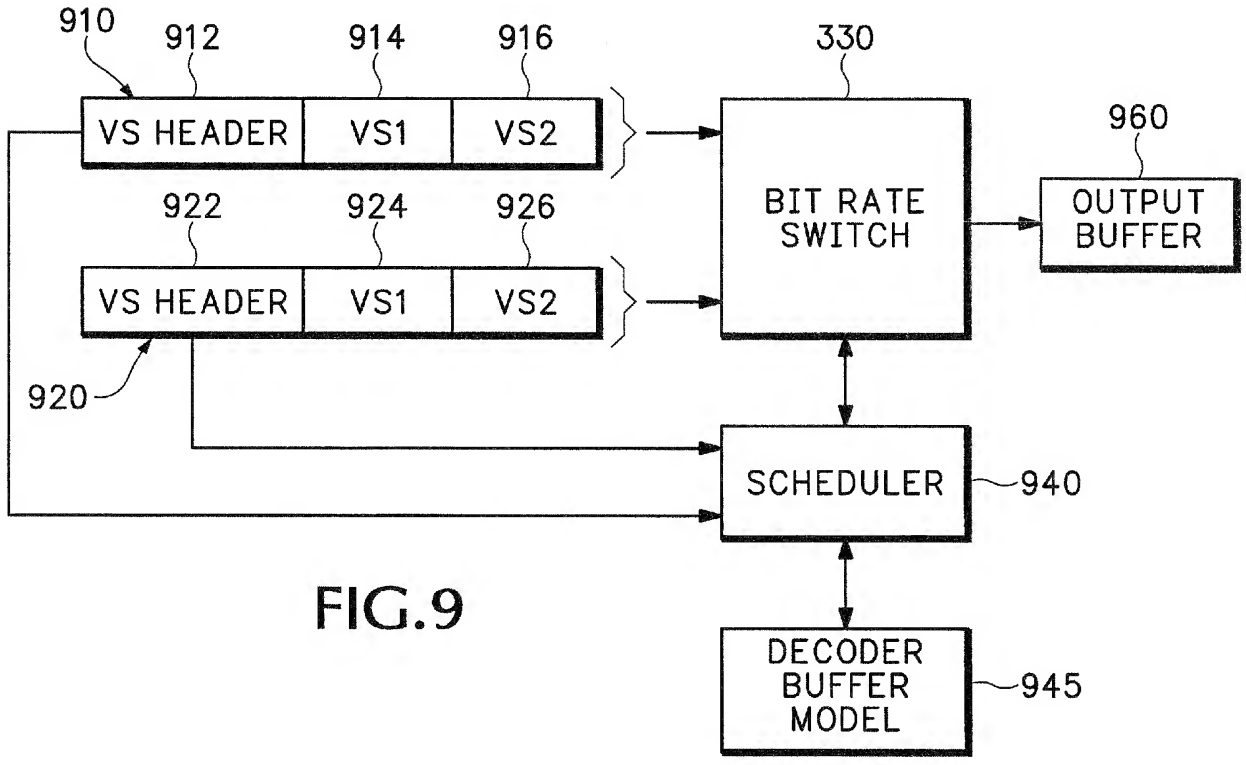
910
912
914
916
330
960
VS HEADER
VS1
VS2
922
924
926
VS HEADER
VS1
VS2
BIT RATE SWITCH
OUTPUT BUFFER
920
SCHEDULER
940
DECODER BUFFER MODEL
945

FIG.9

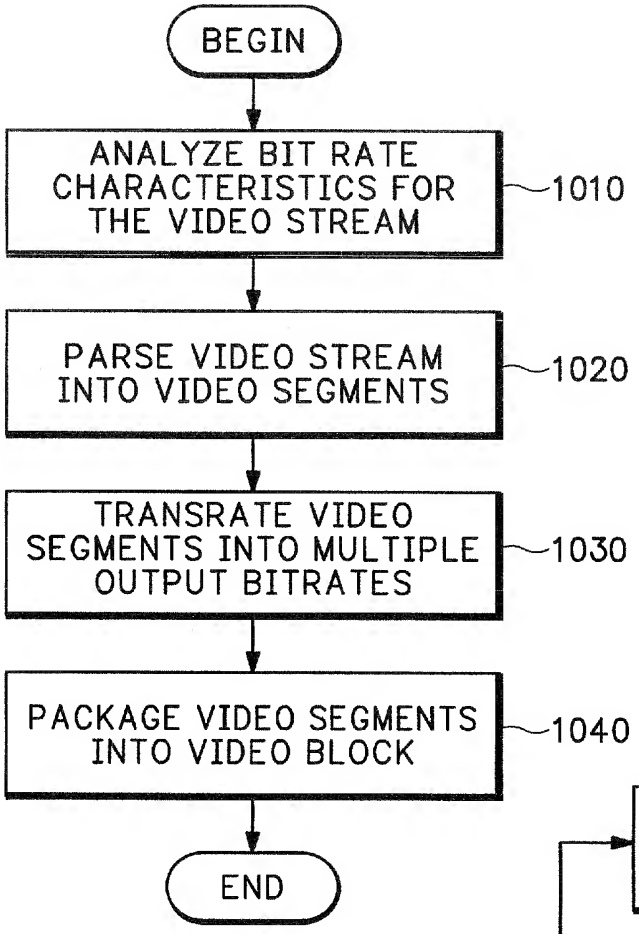
BEGIN
ANALYZE BIT RATE CHARACTERISTICS FOR THE VIDEO STREAM
1010
PARSE VIDEO STREAM INTO VIDEO SEGMENTS
1020
TRANSRATE VIDEO SEGMENTS INTO MULTIPLE OUTPUT BITRATES
1030
PACKAGE VIDEO SEGMENTS INTO VIDEO BLOCK
1040
END

FIG.10

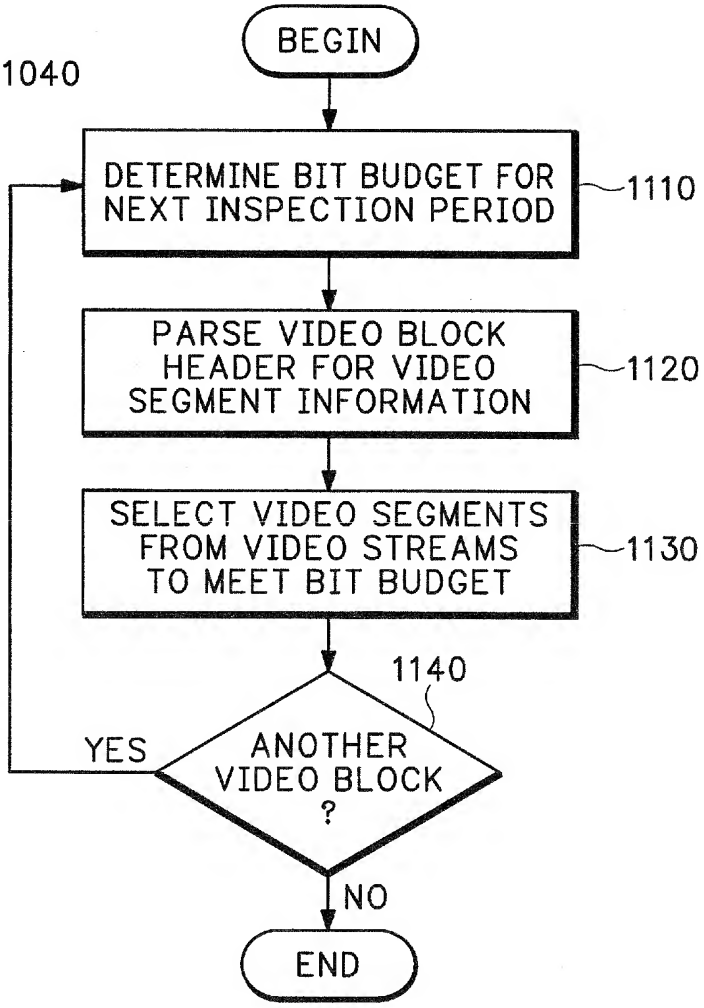
BEGIN
DETERMINE BIT BUDGET FOR NEXT INSPECTION PERIOD
1110
PARSE VIDEO BLOCK HEADER FOR VIDEO SEGMENT INFORMATION
1120
SELECT VIDEO SEGMENTS FROM VIDEO STREAMS TO MEET BIT BUDGET
1130
1140
ANOTHER VIDEO BLOCK ?
YES
NO
END

FIG.11